

KIC 003431112

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003431112-01	OBS	No	420.061152	276.302825	56.3	8.523	7.2	4.4	0.79	5249	0.69	0.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003431112-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

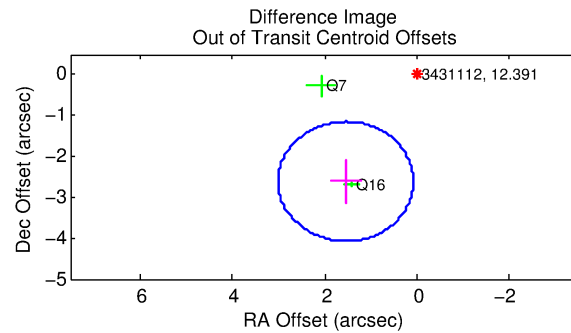
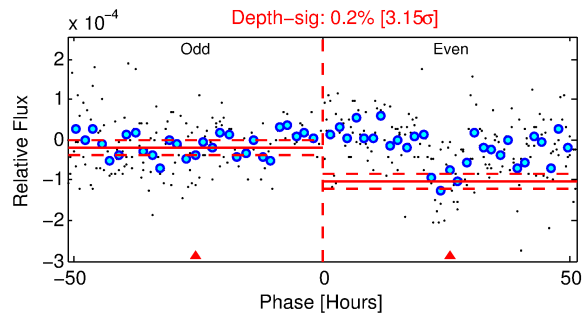
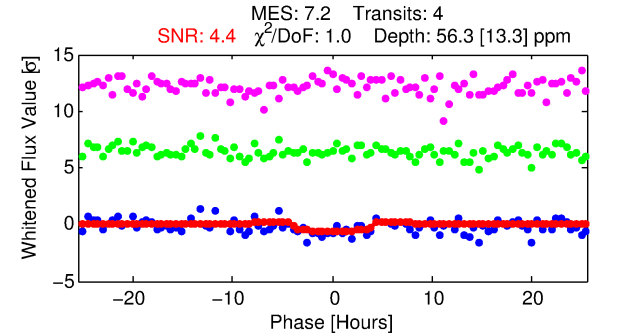
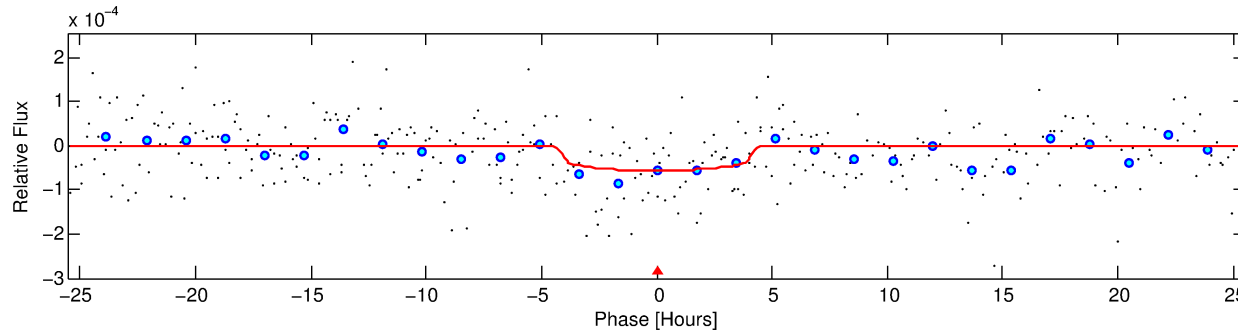
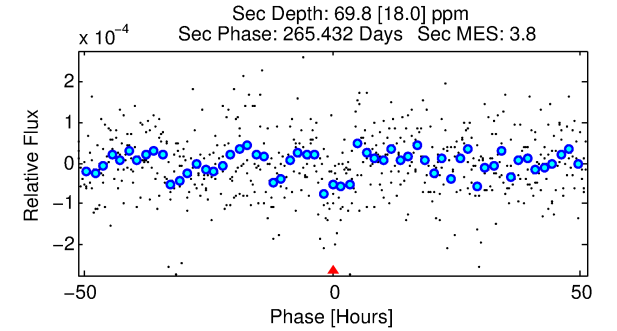
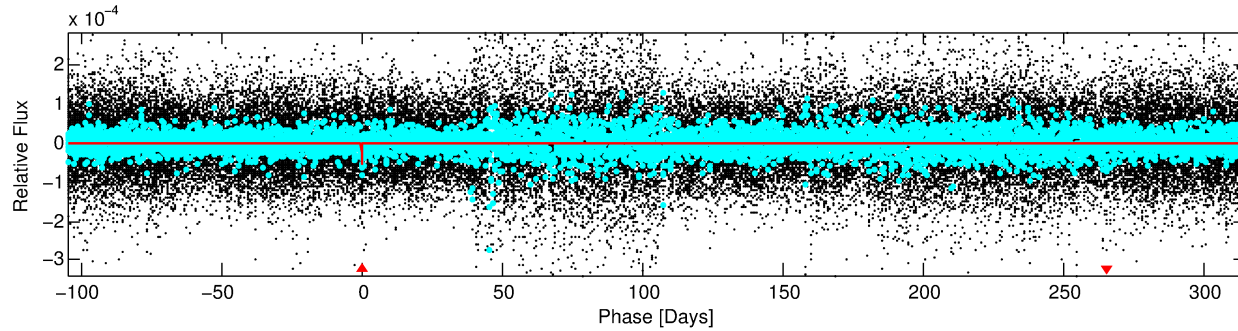
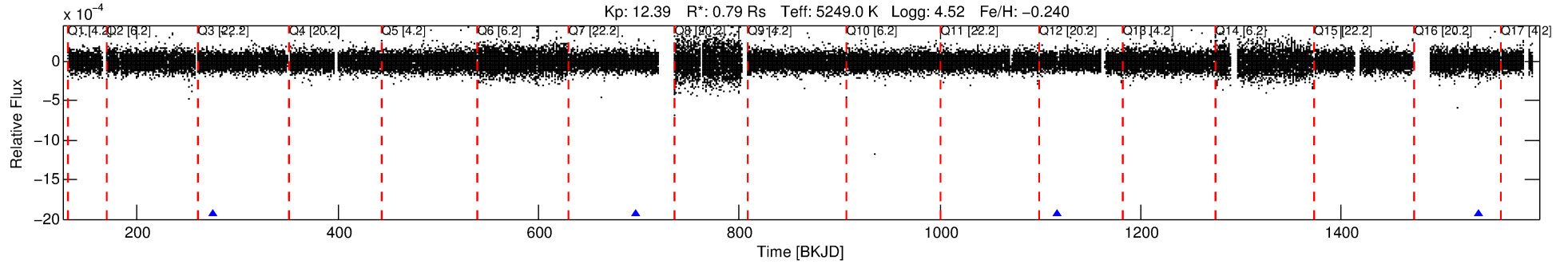
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003431112-01

No Significant Match Found

DV One-Page Summary

KIC: 3431112 Candidate: 1 of 1 Period: 420.061 d



DV Fit Results:

Period = 420.06115 [0.01329] d
Epoch = 276.3028 [0.0245] BKJD
Rp/R* = 0.0079 [0.0078]
a/R* = 204.24 [834.61]
b = 0.85 [1.36]
Seff = 0.43 [0.09]
Teq = 206 [11] K
Rp = 0.69 [0.69] Re
a = 0.9995 [0.1166] AU
Ag = 81725.25 [163793.07] [0.50σ]
Teffp = 5395 [2701] K [1.92σ]

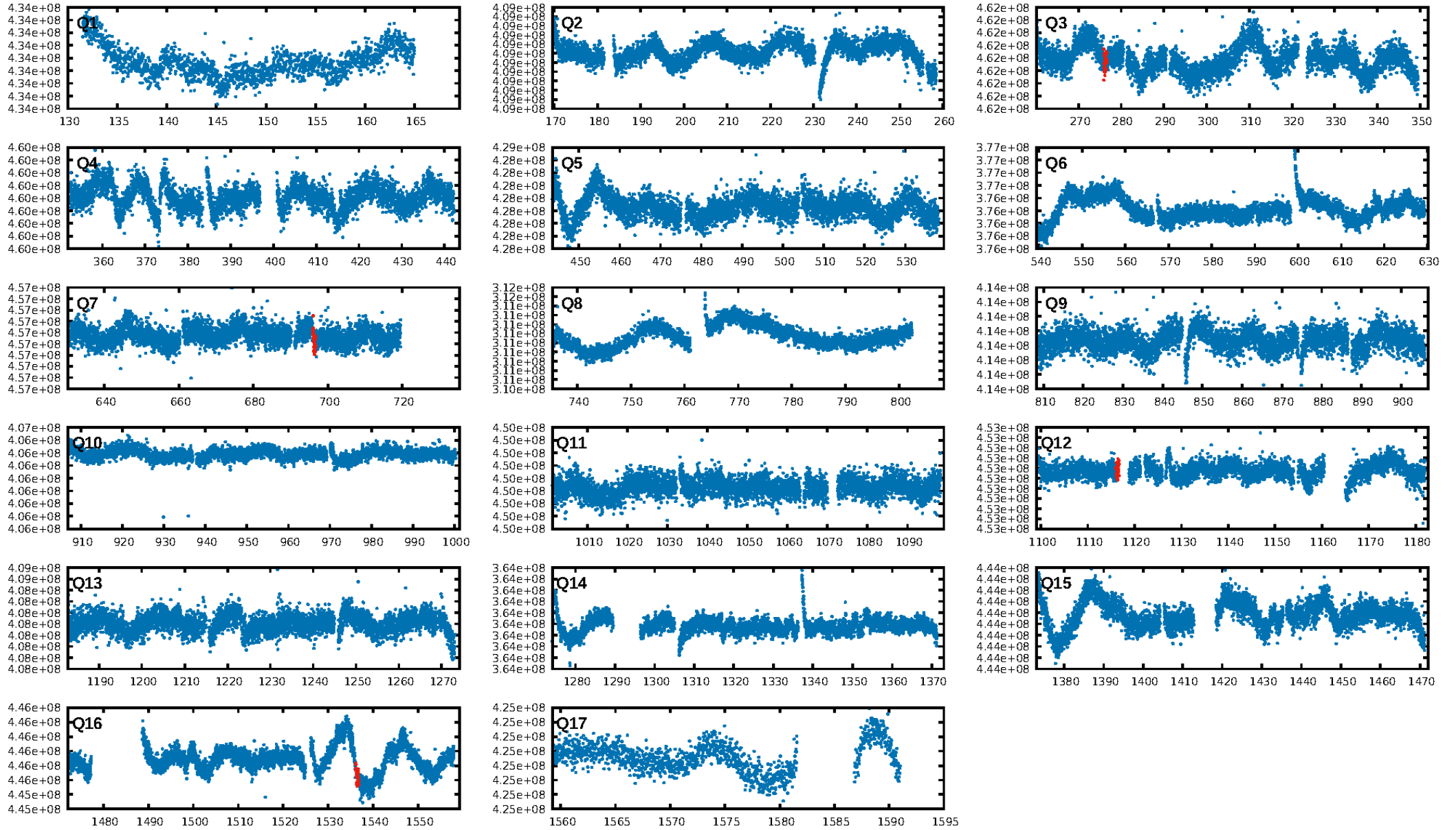
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 95.7%
Bootstrap-pfa: 3.48e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.032
Centroid-sig: 0.2%
Centroid-so: 6.221 arcsec [2.15σ]
OotOffset-rm: 3.037 arcsec [6.23σ]
KicOffset-rm: 3.899 arcsec [3.31σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

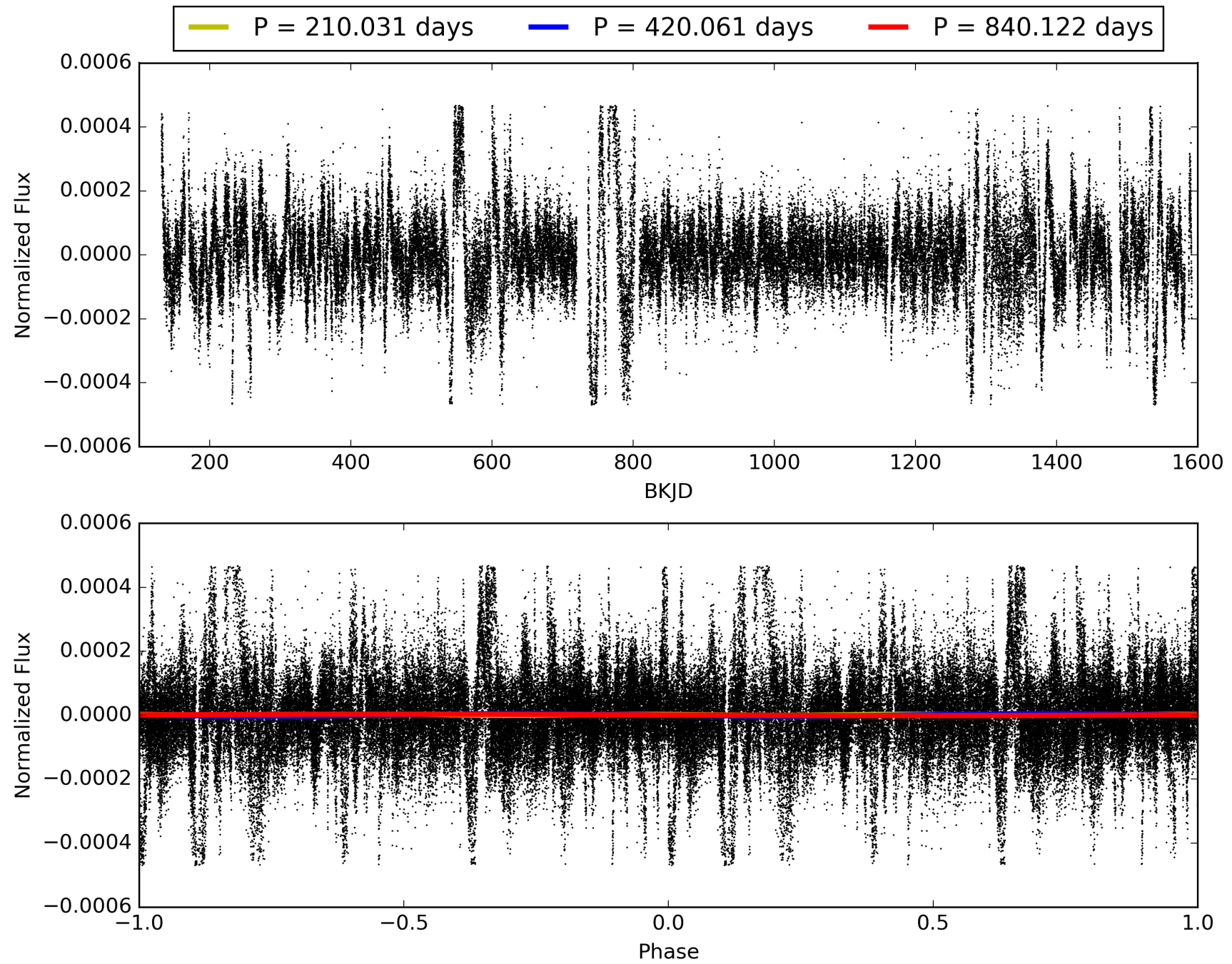
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:35:39 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003431112-01, PDC Light Curves

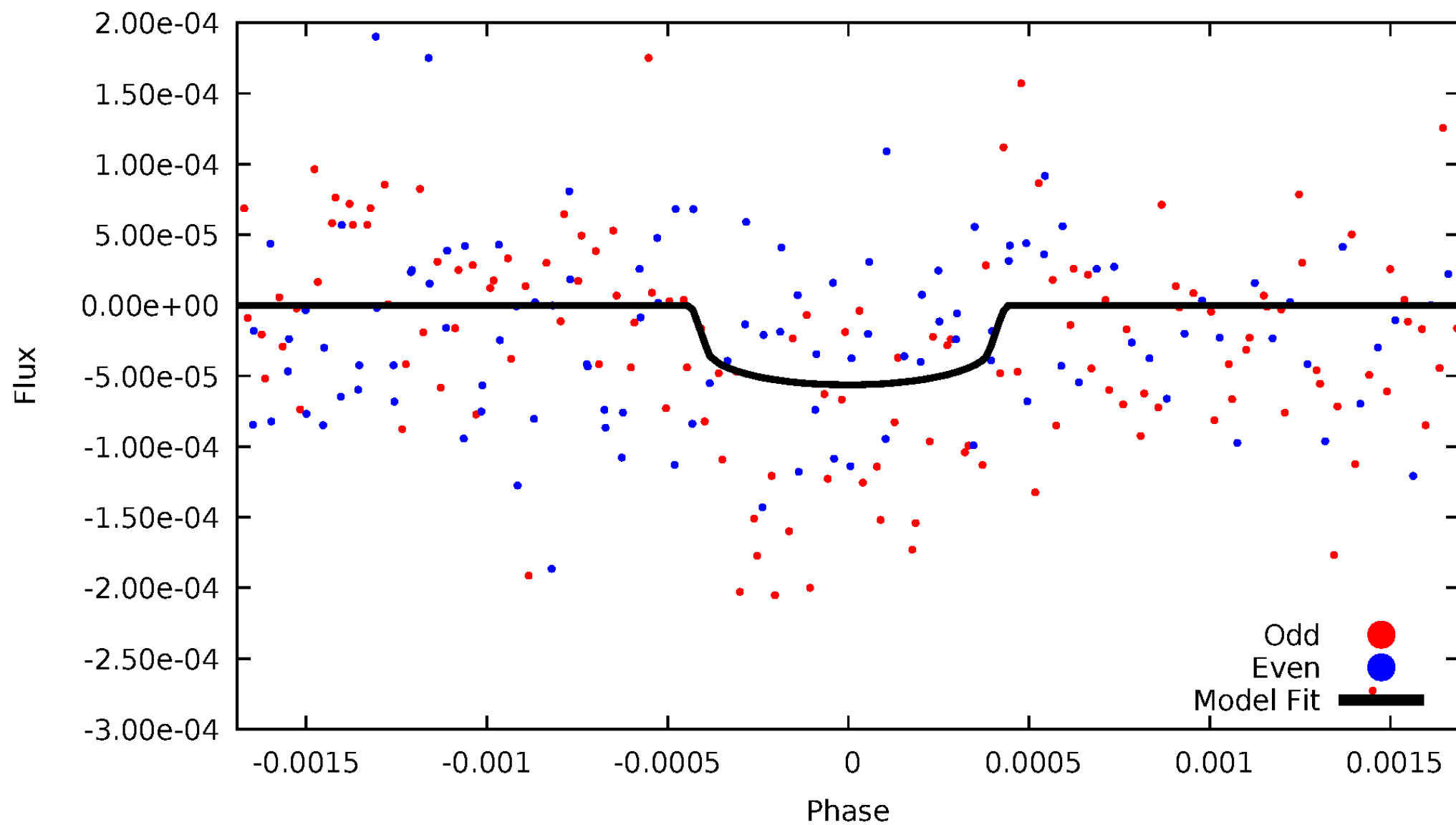


TCE 003431112-01



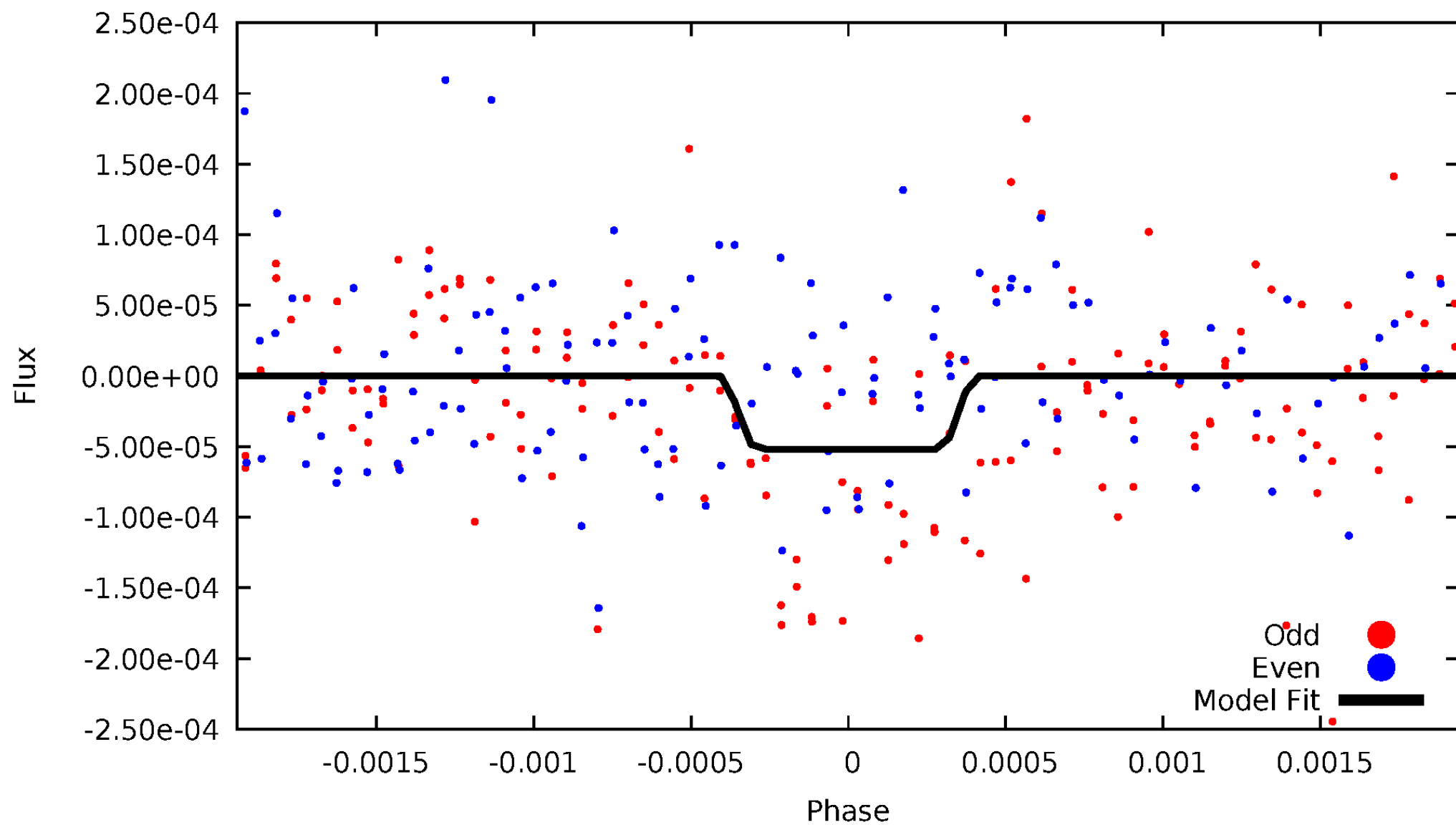
DV Odd/Even

TCE 003431112-01

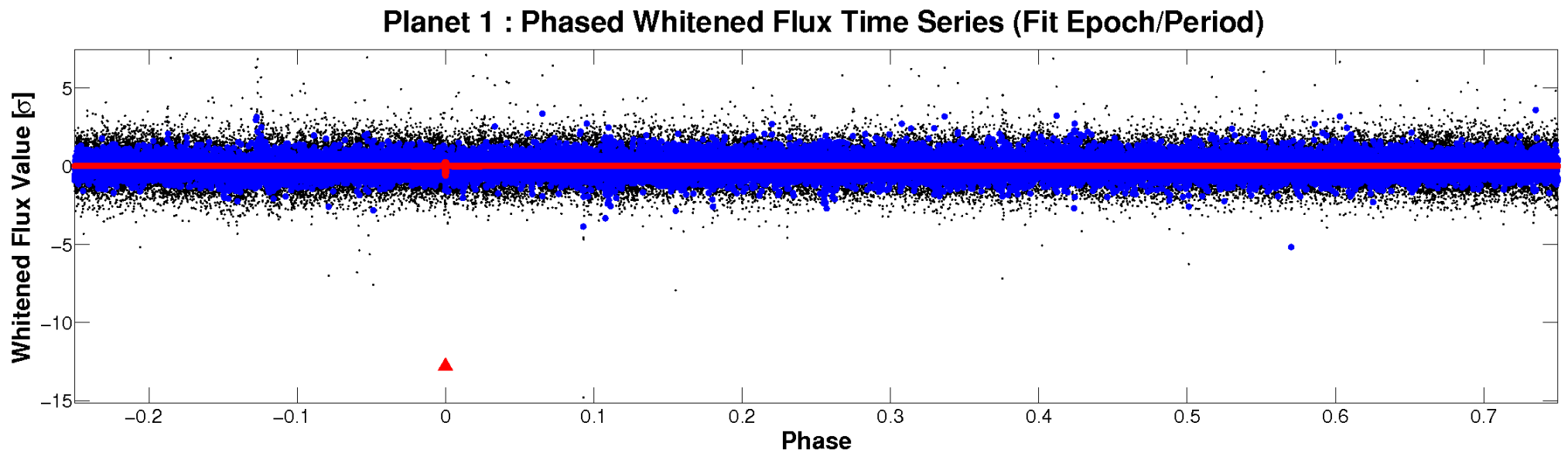
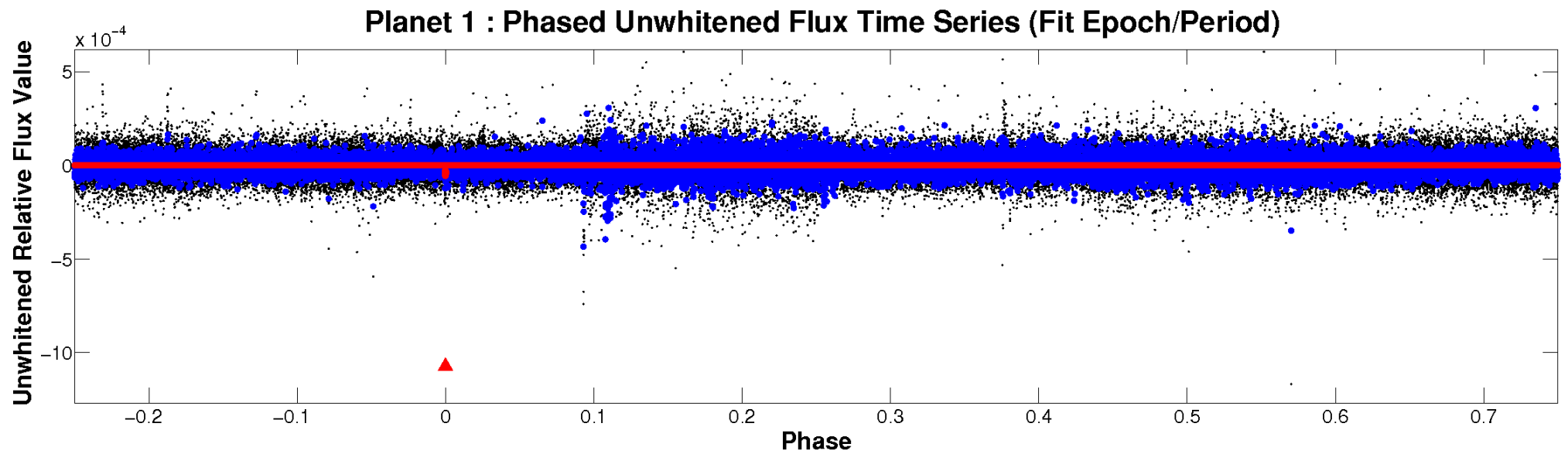


ALT Odd/Even

TCE 003431112-01

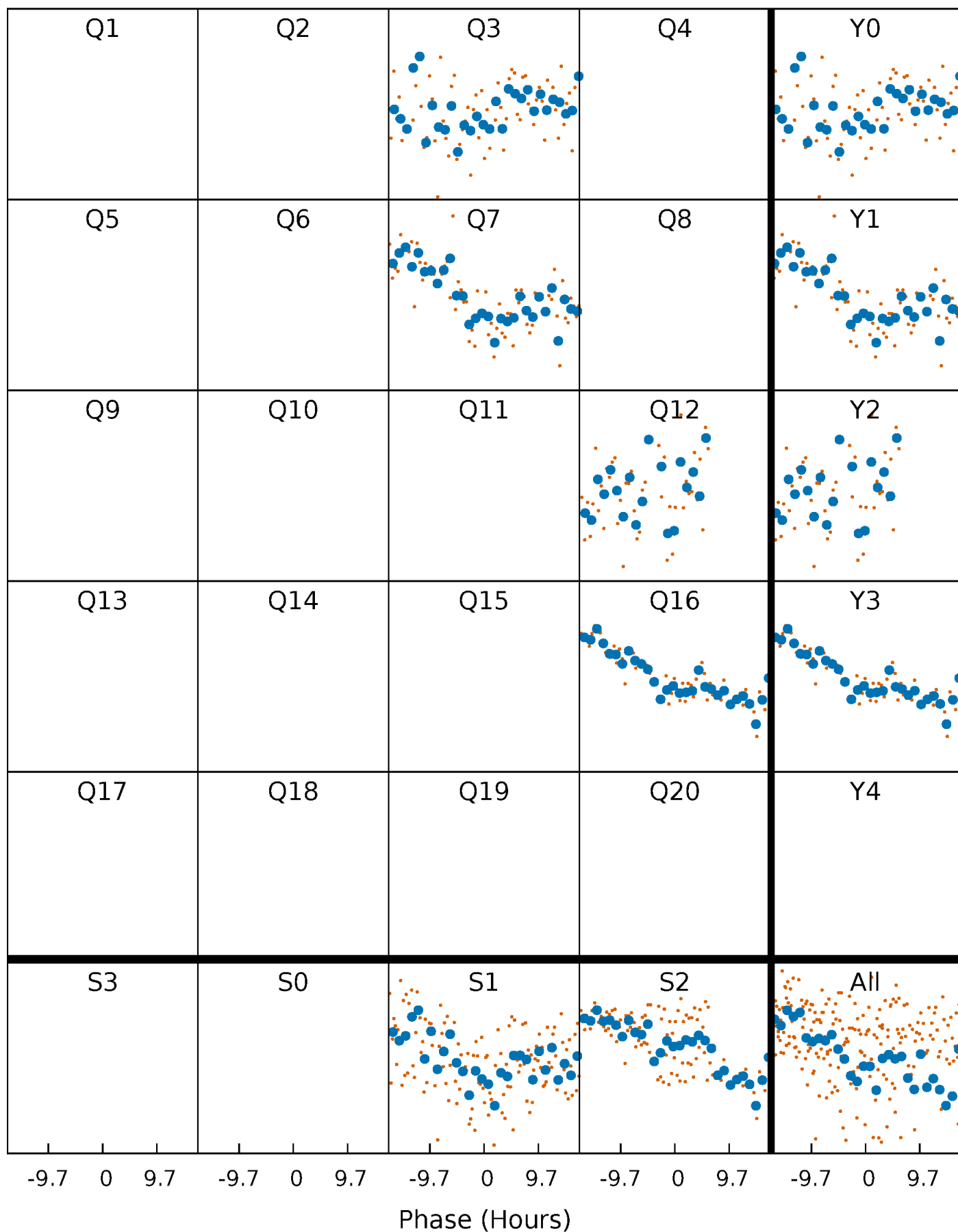


Non-Whitened Vs. Whitened Light Curve



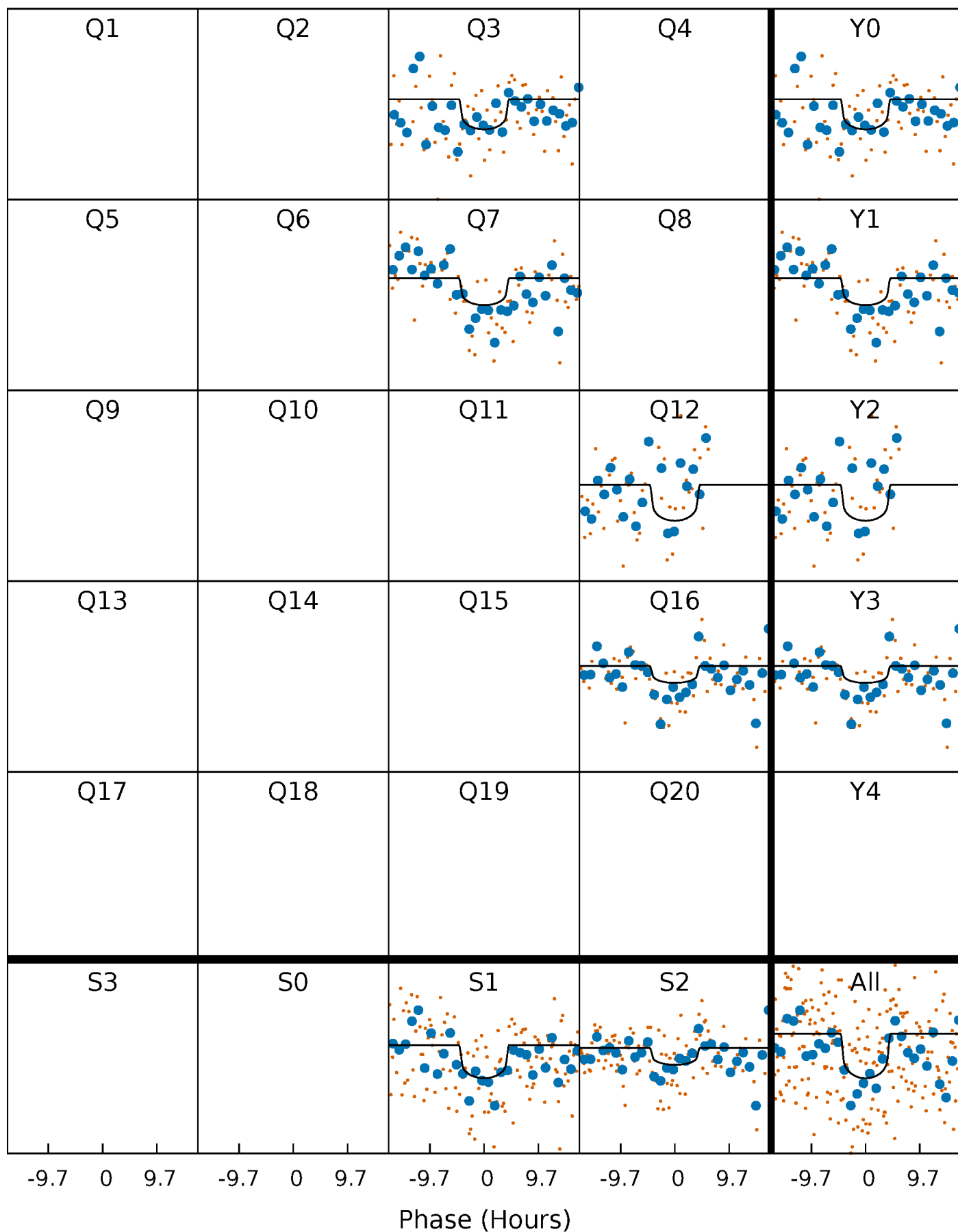
PDC Quarter-Phased Transit Curves

TCE 003431112-01 P=420.061152 Days $T_0=276.302825$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003431112-01 P=420.061152 Days $T_0=276.302825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

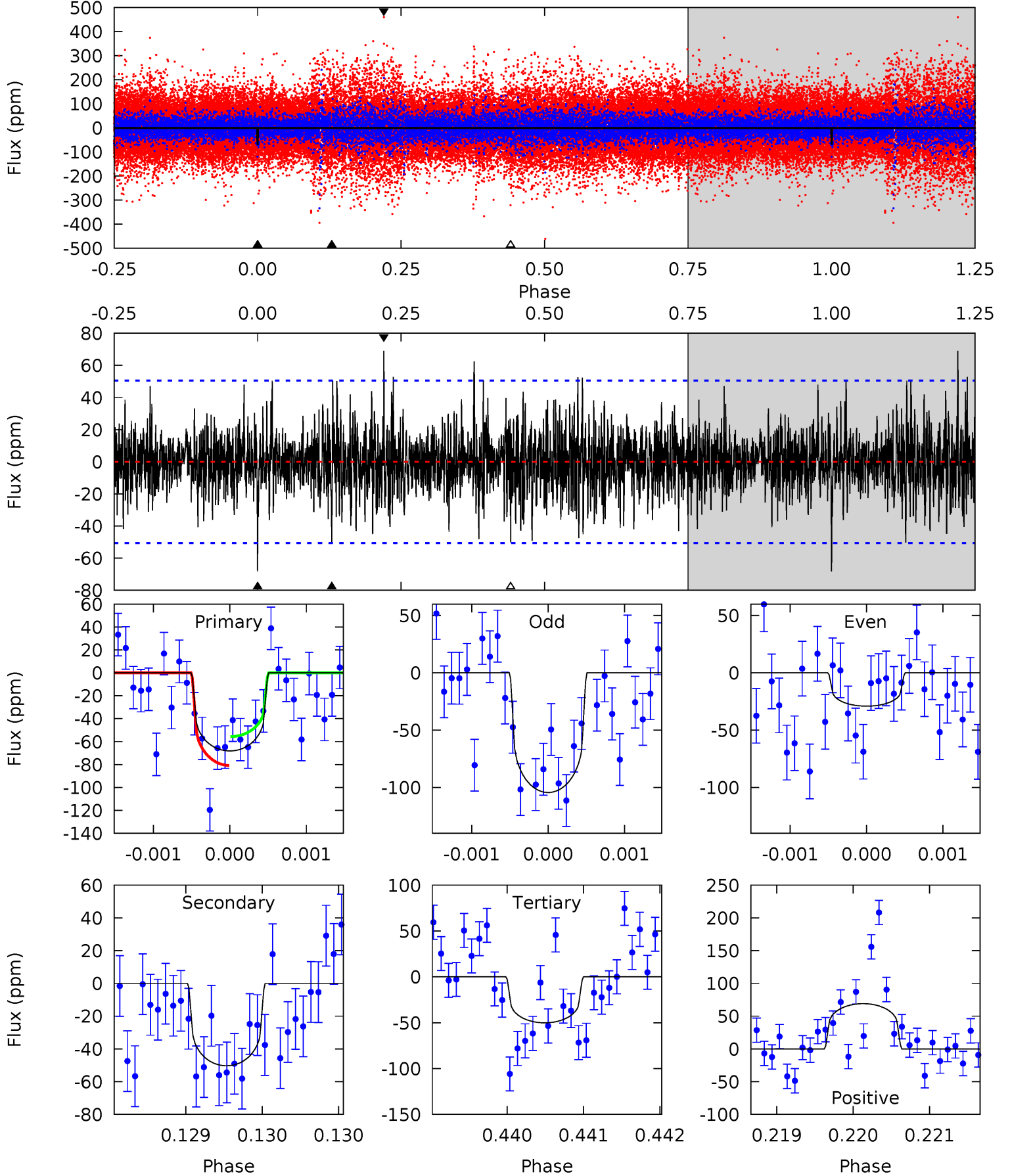
TCE 003431112-01 P=420.052693 Days $T_0=276.291339$ (BKJD)



DV Model-Shift Uniqueness Test

003431112-01, P = 420.061152 Days, E = 276.302825 Days

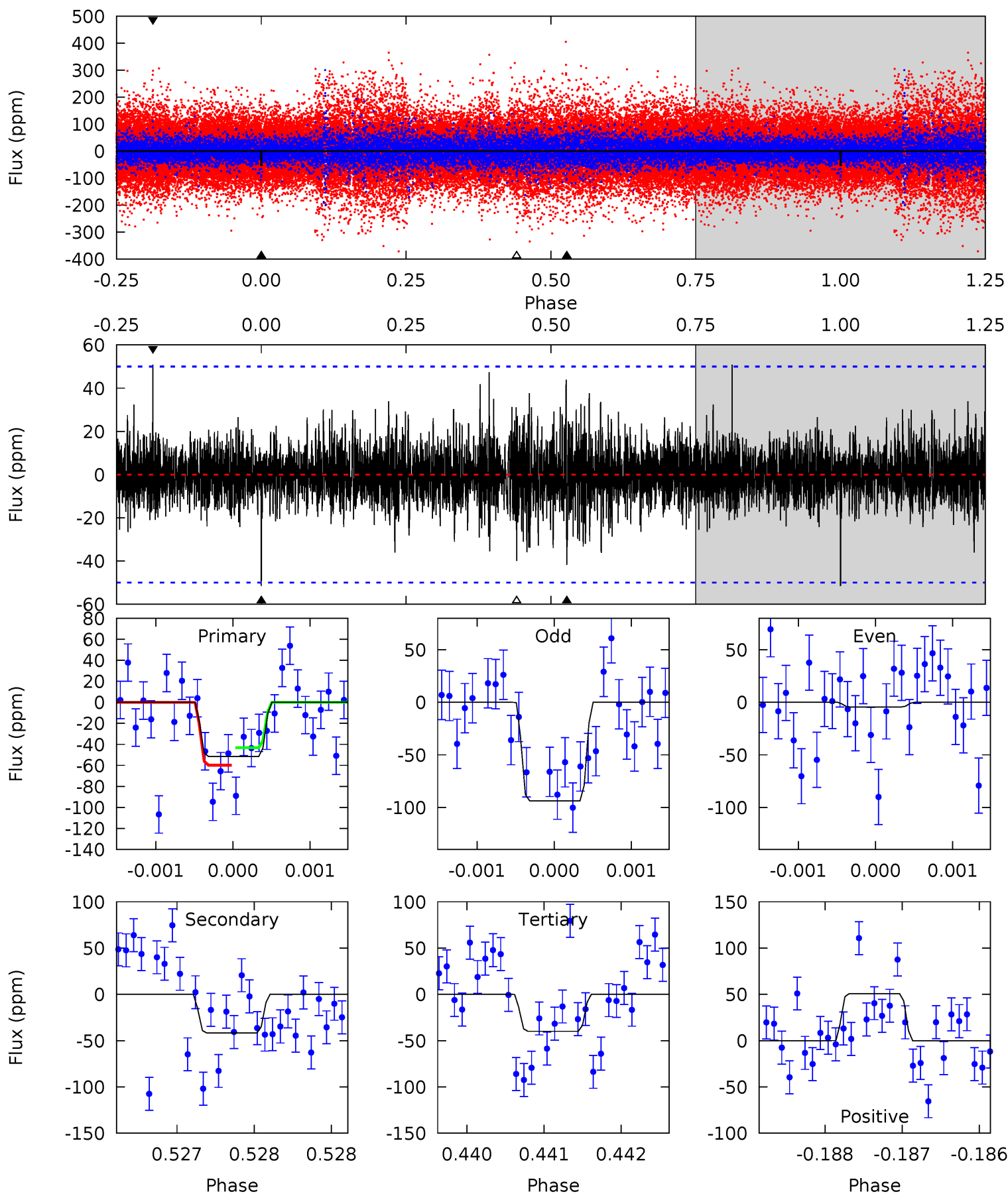
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.37	5.44	5.42	7.47	5.47	3.33	1.57	1.95	-0.10	0.02	-2.03	4.02	0.92	0.50	1.36



Alt Model-Shift Uniqueness Test

003431112-01, P = 420.052693 Days, E = 276.291339 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.66	4.58	4.38	5.58	5.48	3.34	1.07	1.28	0.08	0.20	-1.00	4.93	0.87	0.50	0.91



Stellar Parameters For KIC 003431112

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5249^{+184}_{-184}	$4.516^{+0.090}_{-0.090}$	$-0.240^{+0.300}_{-0.300}$	$0.794^{+0.112}_{-0.091}$	$0.754^{+0.109}_{-0.054}$	$2.123^{+0.801}_{-0.580}$
	+4%/-4%	+2%/-2%	+125%/-125%	+14%/-11%	+14%/-7%	+38%/-27%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003431112-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-50 ± 9	$0.83^{+0.58}_{-0.51}$	289^{+14}_{-13}	4682^{+2701}_{-890}	$41693^{+229058}_{-28572}$
Alt.	-42 ± 9	$0.81^{+0.61}_{-0.49}$	288^{+14}_{-14}	4510^{+2583}_{-846}	$35350^{+213942}_{-24433}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

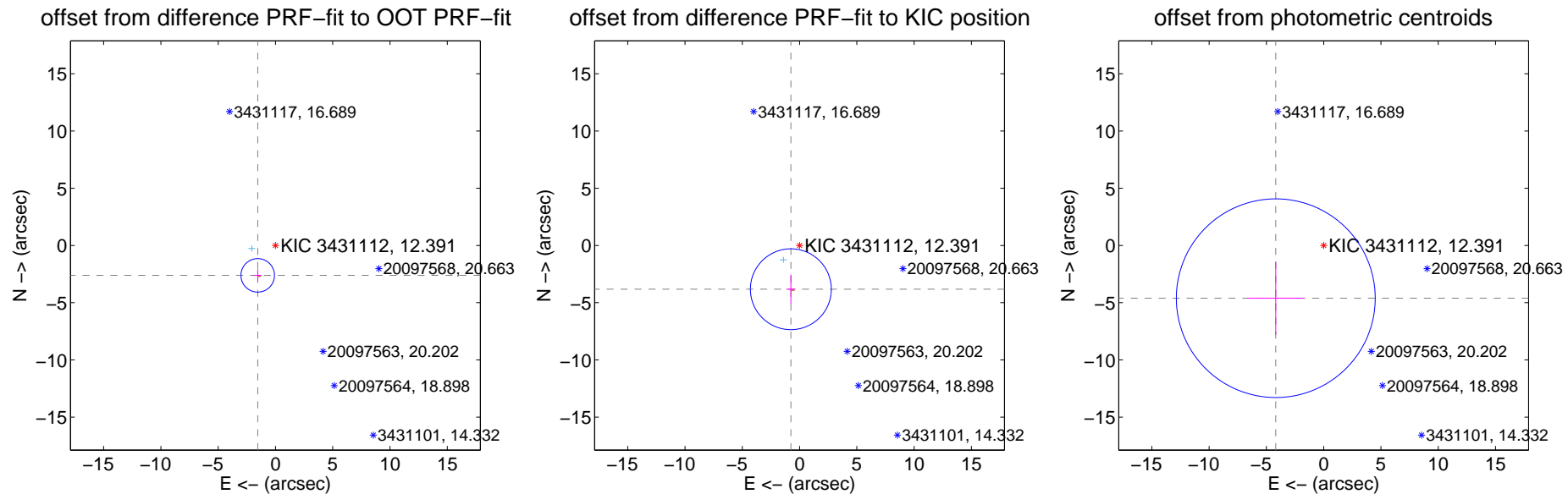
DV Centroid Data

Supplemental centroid analysis for 003431112-01. Kepler magnitude: 12.39. Transit SNR 4.44

There are 1 quarters with good PRF difference image offsets

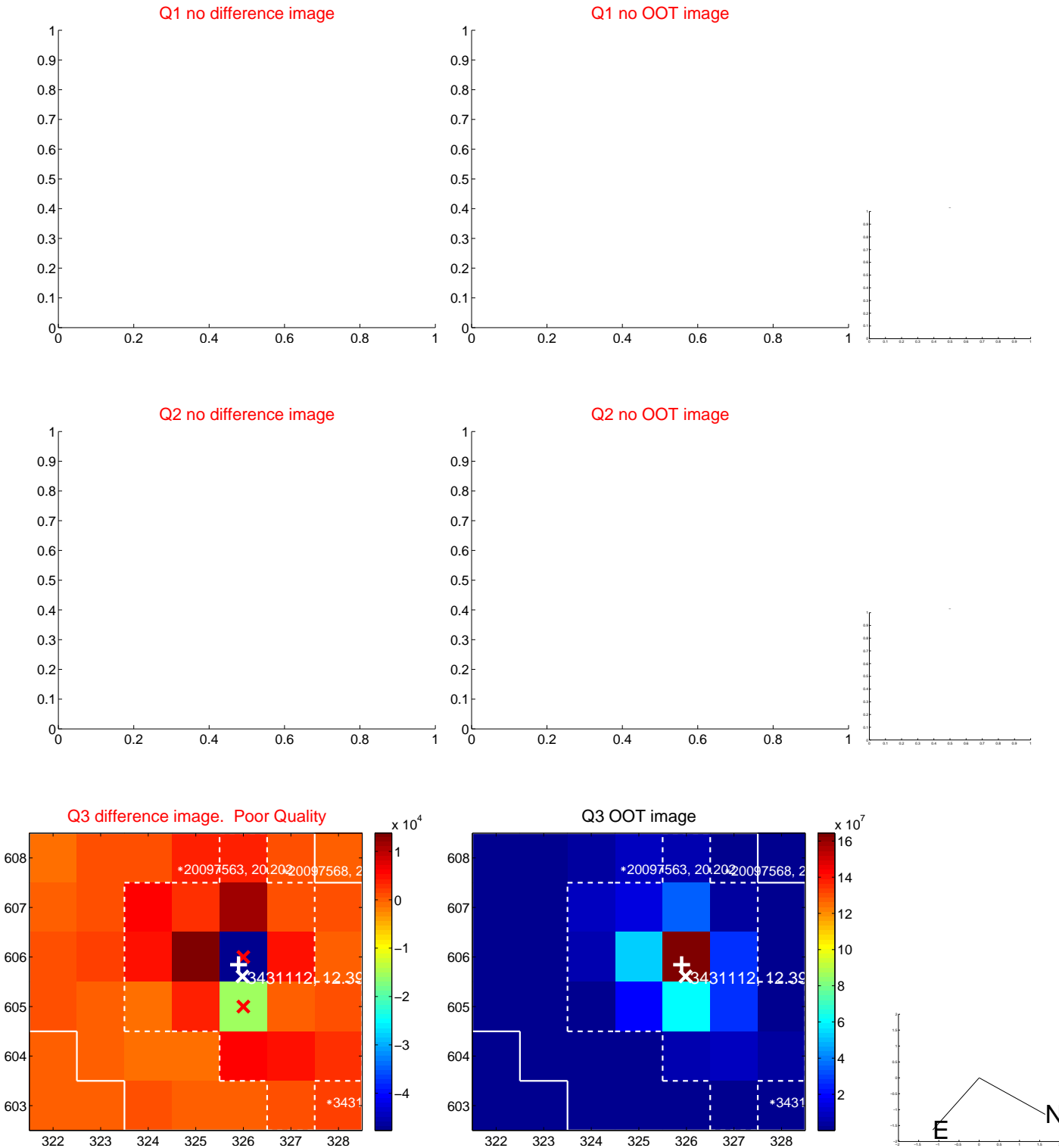
The direct PRF centroid is offset from the target star catalog position by about 1.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.037 ± 0.488	6.23	1.548 ± 0.322	-2.613 ± 0.534
PRF-fit source offset from KIC position	3.899 ± 1.177	3.31	0.761 ± 0.400	-3.824 ± 1.278
photometric centroid source offset	6.22 ± 2.89	2.15	4.18 ± 2.48	-4.61 ± 3.19

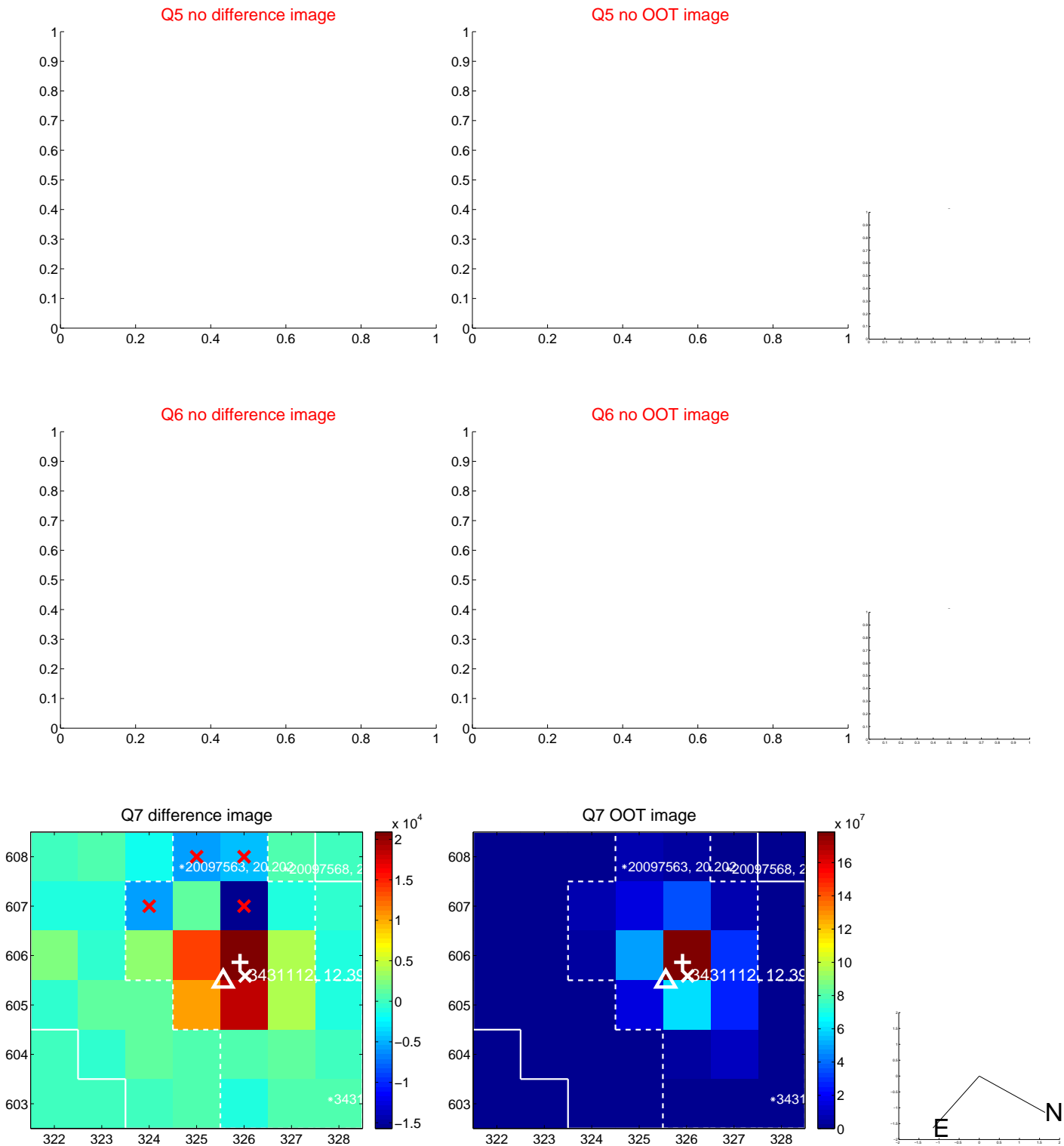


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



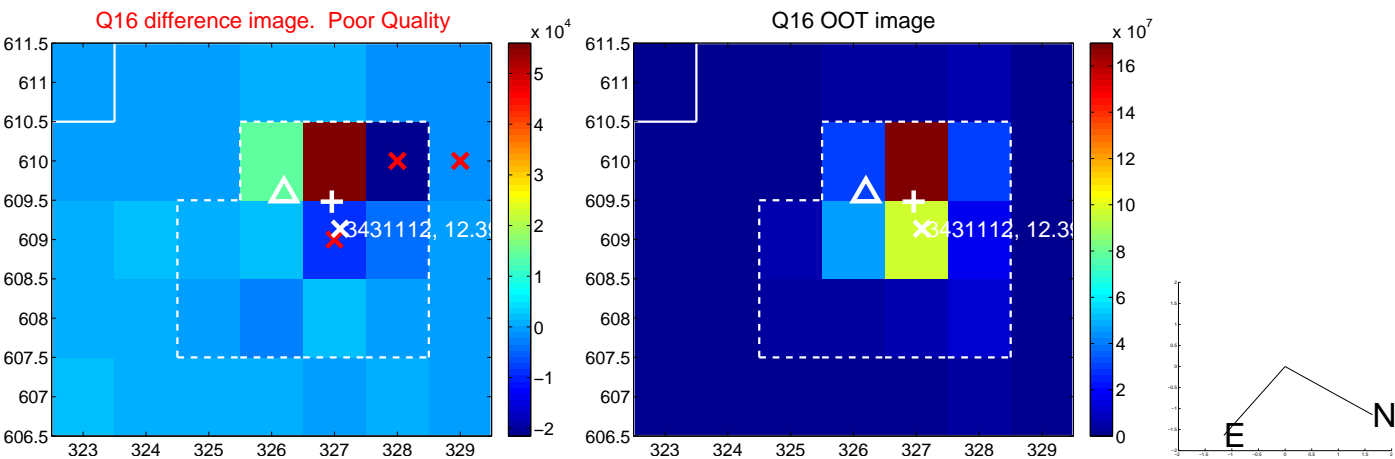
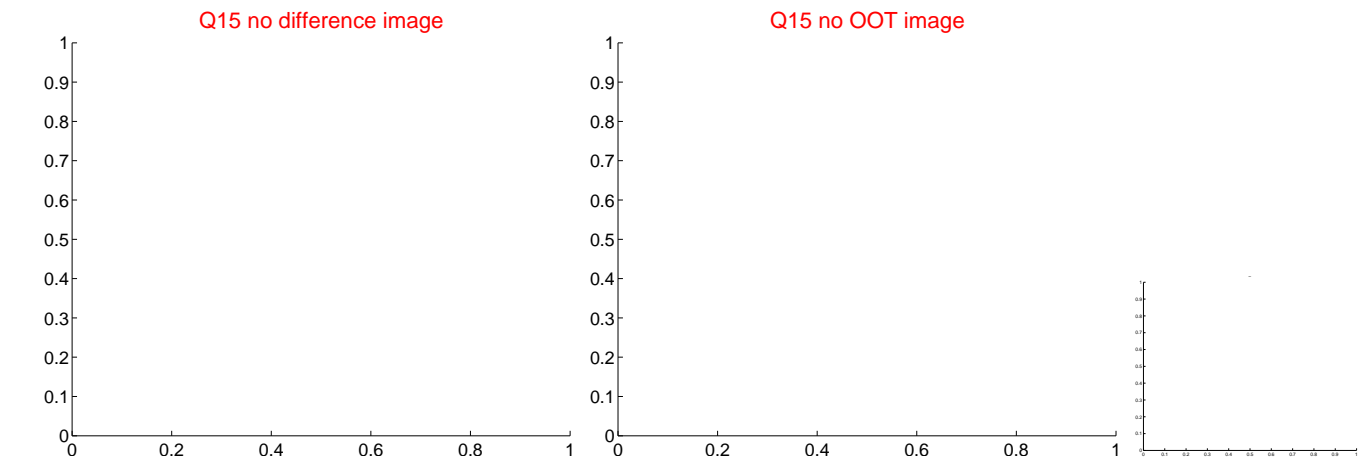
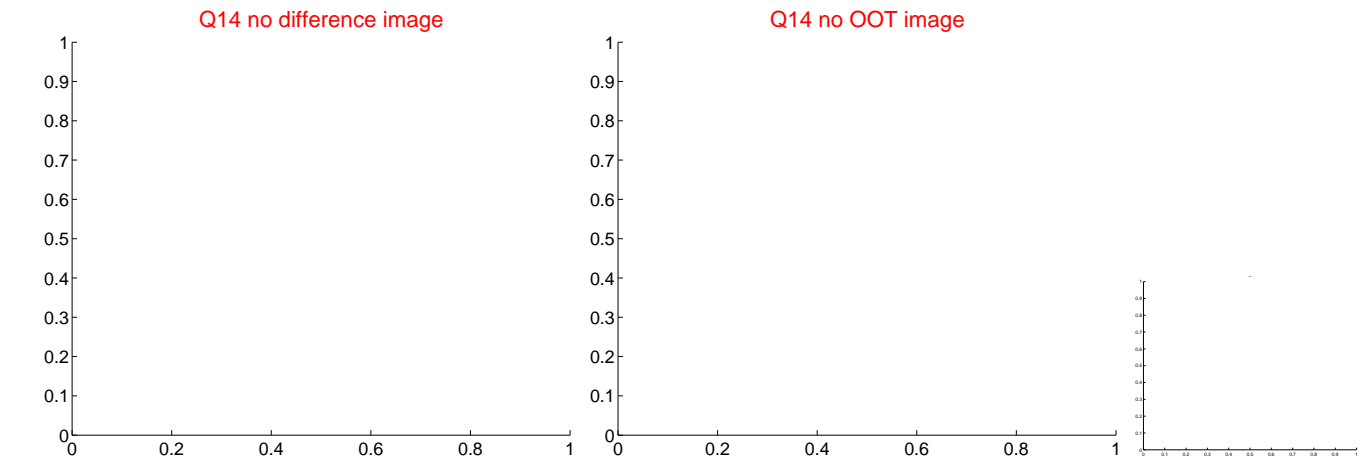
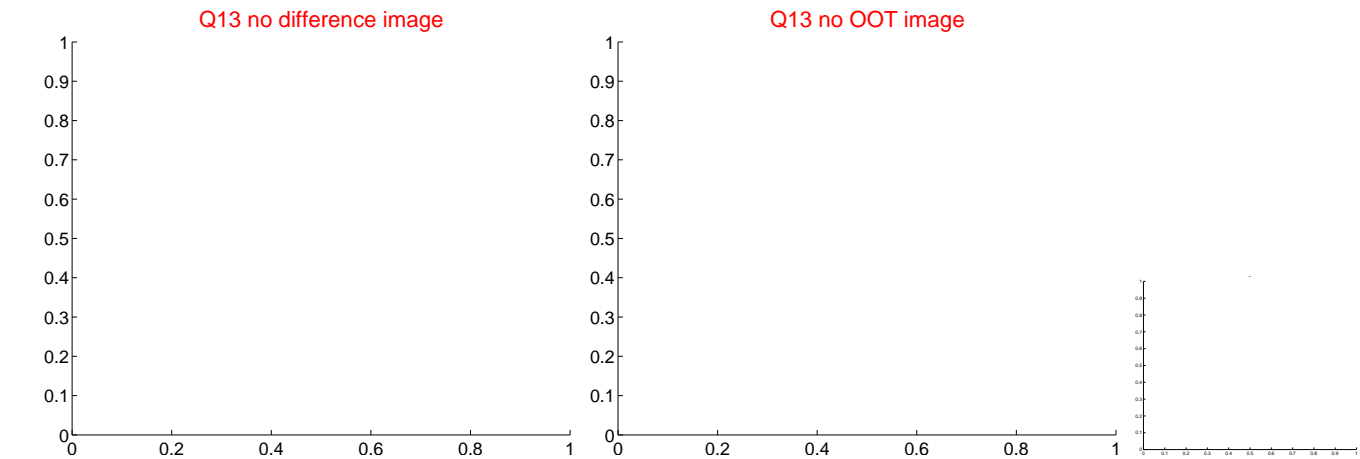
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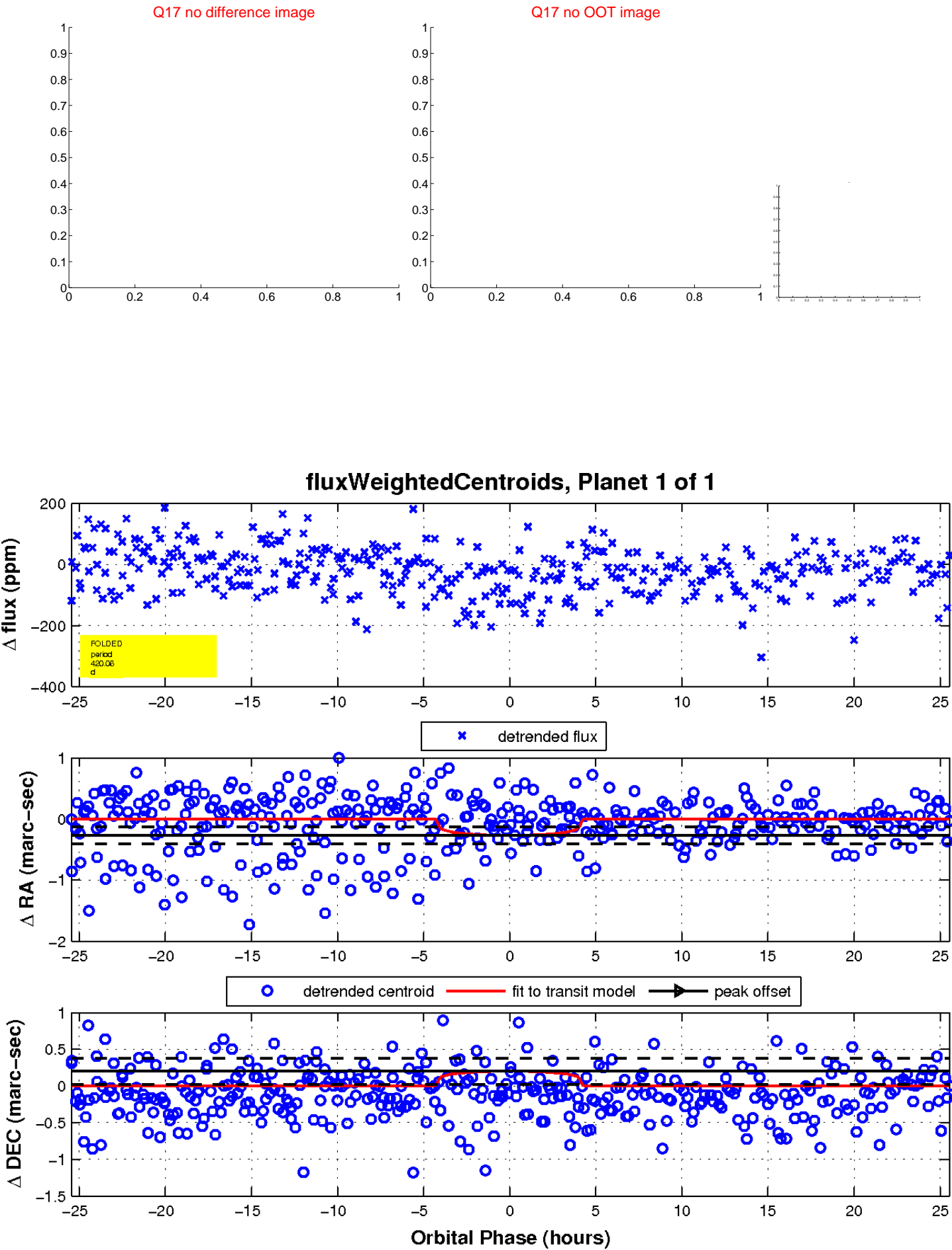
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UKIRT Image

Declination

